Remarks

Claims 1-20 are now in the application. No new matter has been added by this Response. Reconsideration and prompt allowance of the pending claims are respectfully requested in light of the following remarks.

Claims 1-8 and 10-20 have been rejected under 35 U.S.C. §102(b) as being anticipated by Sauer et al. (U.S. Patent No. 5,852,219). Claims 1-20 have been rejected under 35 U.S.C. §102(b) by Mashkina et al., Reaction Kinetics and Catalysis Letters (1988), 36(1), 159-164. Claim 9 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Sauer.

Claim 1 recites, among other features, that the pH of the catalyst, measured on a 10% strength aqueous suspension, is in the range from 5.0 to 9.7. At least this feature of independent claim 1 cannot reasonably be considered to be suggested by Sauer or Mashkina.

Neither applied citation indicates what pH would be obtained with a 10% strength aqueous suspension of the catalysts suggested in Sauer or Mashkina. Applicants herewith submit the enclosed Experimental Report, which measures the pH of a catalyst according to Sauer, on two very similar support materials, which corresponds to comparative example 1 discussed in Applicants' disclosure. As set forth in the Experimental Report, the comparative example results in 10% strength suspensions having a pH of 9.8 or 9.9, which is outside the range recited in claim 1. In the event the Examiner desires, the Experimental Report can be presented in verified form as a Declaration under 37 C.F.R. 1.132

Applicants demonstrated in the Experimental Report that an aqueous solution of the catalyst of comparative example 1 discussed on page 7 of Applicants' disclosure has a pH of 9.8 whereas aqueous solutions of the three catalysts as claimed have pH values in the range of 6.0 to 8.2. Further, the catalysts as claimed achieve surprisingly high selectivities and yields in the preparation of methyl mercaptan compared to comparative example 1.

Like Sauer, Mashkina does not disclose the pH of a 10%-strength solution of the catalysts suggested therein. A sample of a catalyst according to Mashkina was not readily available. However, as set forth on page 2, lines 34-36, of Applicants' disclosure, the catalysts of the related art, such as Mashkina and Sauer, are still in need of improvement with regard to the selectivity and activity and economical process conditions. Accordingly, the catalysts suggested in Mashkina do not provide all of the associated benefits achievable by a catalyst as recited in claim 1.

Mashkina describes the activity of various catalyst for the synthesis of methyl mercaptan from methanol and hydrogen sulfide with catalysts produced by impregnating Al_2O_3 with tungstates. Although some modeling studies on the condensation behavior of tungstates in solution are described on page 162, third paragraph to page 163, first paragraph, Mashkina does not recognize that the pH of an aqueous suspension of the catalyst is a result-effective variable. Quite to the contrary, Mashkina states right at the beginning at page 159, lines 1-4, that the catalysts suggested therein all have approximately the same activity regardless of the degree of condensation of the tungstates applied, and, therefore, regardless of the pH of the impregnation solutions.

In addition, a catalyst as recited in claim 1 achieves superior results over the catalysts suggested in Mashkina. Examples 6 and 7 of Mashkina, having a similar material composition to a catalyst as claimed, display a selectivity to methyl mercaptan of 83 and 86%, respectively. In contrast, the selectivities of the claimed catalysts, such as examples 2-4 in the table of page 7 of Applicants' disclosure, achieve superior selectivities of 88-89% at a significantly improved yield compared to the comparative example 1.

Further, as set forth on page 3, lines 1-2, of Applicants' disclosure, it is a critical feature of the claimed catalyst to perform well while the ratio of hydrogen sulfide to alcohol deviates only slightly from one to reduce the energy consumption required. The performance test described on page 7 demonstrates that the claimed catalyst achieves superior selectivities and yields at a molar ratio of hydrogen sulfide to methanol of 1.9 mol: 1.5 mol, i.e., a ratio of approximately 1.27, whereas Mashkina requires, in Table 1 on page 161, a ratio of 1.6.

Claims 2-20 are in condition for allowance for at least their dependence on an allowable claim 1, as well as for the separately patentable subject matter that each of these claims recites.

In view of the above amendment, Applicants believe the pending application is in condition for allowance.

If the Examiner believes an interview may be helpful in any way in the prosecution of this application, the undersigned is available at the telephone number set forth below.

Applicants concurrently herewith submit the requisite fee for a Petition for a three-month Extension of Time. Applicants believe no additional fee is due with this response. However, if any additional fee is due, please charge our Deposit Account No. 03-2775, under Order No. 12810-00159-US1 from which the undersigned is authorized to draw.

Dated: September 4, 2008

Respectfully submitted,

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